

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1.-16. (Cancelled)

17. (New) A print robot for large format three-dimensional printing on a fixed surface, comprising an inkjet printing assembly, means for displacing and orientating this printing assembly along several axes, at least one control unit controlling these means and a drying device for the ink sprayed onto said surface, wherein said robot is a print robot with five motorized axes and wherein the displacement and orientation means comprise:

- a carrier with three degrees of freedom in translation, which ensures positioning of the printing assembly allowing its horizontal, vertical and depth translation,

- a wrist with two degrees of freedom in rotation which supports and ensures the orientation of the printing assembly allowing its rotations (Rx, Ry) along two perpendicular axes.

18. (New) A robot as claimed in claim 17, wherein the carrier comprises:

- a first mobile carriage provided with a driving system moving on two horizontal rails,

- a beam fixed perpendicular to the first mobile carriage, a second mobile carriage provided with a driving system moving on two vertical rails mounted on this beam,

- a slide fixed perpendicular to the second mobile carriage, a mobile platform moving along this slide.

19. (New) A robot as claimed in claim 17, wherein the wrist comprises two identical systems screws/rods/cranks each linked to a mobile carriage.

20. (New) A robot as claimed in claim 19, wherein the wrist supports the ink drying device.

21. (New) A robot as claimed in claim 20, comprising five servomotors respectively associated with the five axes of this robot.

22. (New) A robot as claimed in claim 21, which as input comprises:

- several optical sensors to measure the distance between the printing assembly and the surface to be printed,

- five encoders for the motor axes to determine the displacement of the servomotors,

- two end-of-travel sensors and one start point sensor respectively associated with each axis of the robot.

23. (New) A robot as claimed in claim 22, comprising a real-time control device which comprises:

- a central unit module,
- at least one module to control the axes,
- a digital input-output module.

24. (New) A robot as claimed in claim 23, comprising a general control device which includes:

- a real-time control module,
- a sensor signal interfacing/relay and packaging module,
- a supply/instrumentation module,
- a brake feed module,
- a safety management module,
- a ventilation assembly,
- five digital motor speed controllers.

25. (New) A robot as claimed in claim 24, comprising:

- a first computer terminal dedicated to control of the movements of this robot,
- a second computer terminal dedicated to monitoring the robot, including:
 - coordination between displacement of the robot and the printing operation,
 - processing the digital image to be printed,
 - man-machine interfacing.

26. (New) A robot as claimed in claim 17, wherein the printing assembly comprises at least one printing block provided with several printing heads using inks of different colors.

27. (New) A robot as claimed in claim 26, wherein each printing block comprises four printheads respectively using yellow, cyan, magenta and black inks.

28. (New) A robot as claimed in claim 26, wherein the inks are ultraviolet drying inks.

29. (New) A printing process using at least one robot as claimed in claim 17, which after a prior step to digitize the image and divide it into strips of determined width, comprises the following steps:

- positioning a medium with respect to the robot(s),
- initial setting of the robot(s) and positioning their heads with respect to the surface of the medium, at the point where printing of the image is to start,
- printing the image on said surface with successive printing of the different vertical strips forming the image,
- return to a rest configuration.

30. (New) A process as claimed in claim 29, which comprises a prior surface preparation step so as to make it clean and uniformly white.

31. (New) A process as claimed in claim 29, wherein printing starts at the lower left-hand corner of the surface.

32. (New) A process as claimed in claim 29, wherein the width of the vertical strips is approximately 7 cm.